(12) UK Patent (19) GB (11) 2 122 329 B

SCIENCE REFERENCE LIBRARY

(54) Title of invention

Vertical flow incinerator having regenerative heat exchange

(51) INT CL^4: F28D 17/04
F23G 7/06

(21) Application No
8316536

(22) Date of filing
17 Jun 1983

(30) Priority data

(31) 391110

(32) 23 Jun 1982

(33) United States of America (US)

(43) Application published
11 Jan 1984

(45) Patent published
18 Sep 1985

(73) Proprietors
Regenerative Environmental Equipment Co Inc
(USA-New Jersey)
520 Speedwell Avenue
Morris Plains
New Jersey 07950
United States of America

(72) Inventor
Edward H. Benedick

(74) Agent and/or Address for Service
Keith W. Nash & Co.,
90-92 Regent Street,
Cambridge CB2 1DP

(52) Domestic classification
F4K 24B2 25U
F4B 105 131 LN
U1S 1184 1438 F4B F4K

(56) Documents cited
None

(58) Field of search
F4K
F4B

LONDON THE PATENT OFFICE

GB 2 122 329 B

2122329

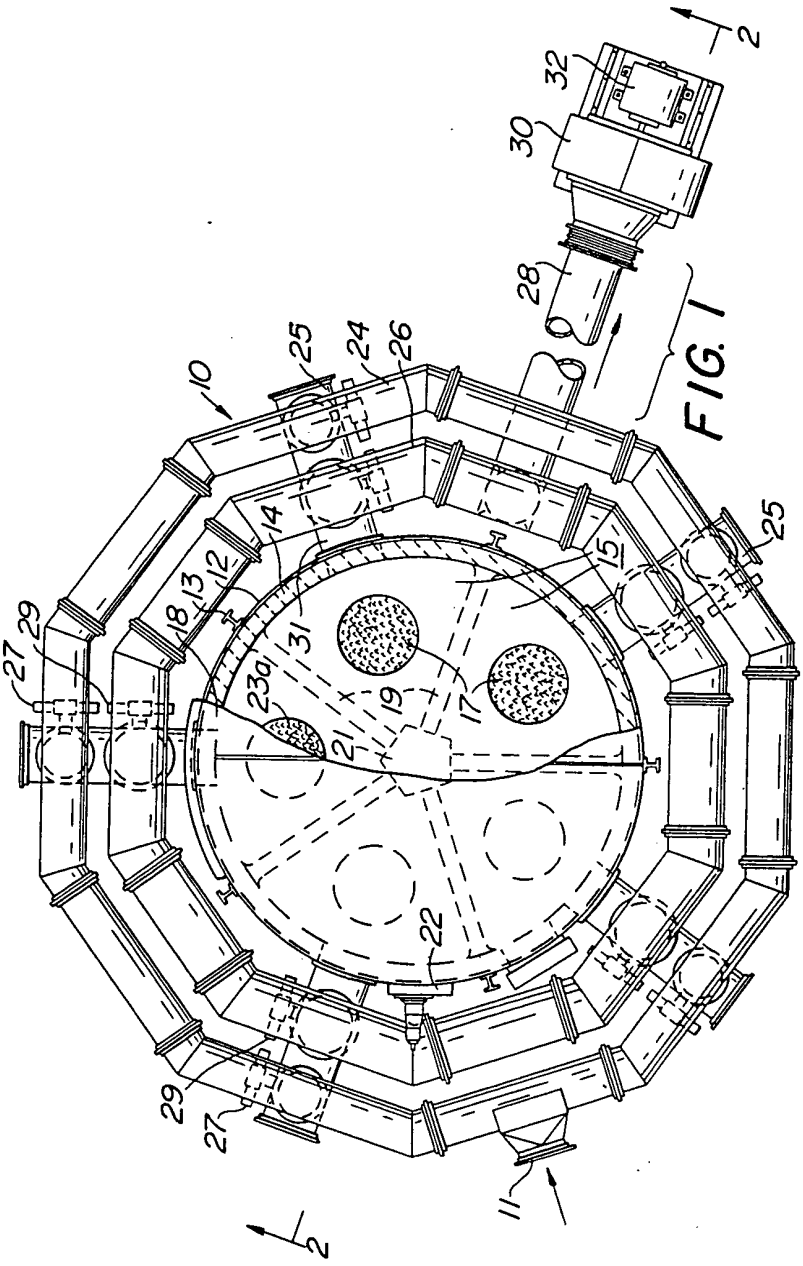

FIG. 1

Claims

1. Thermal recovery incineration apparatus comprising:

(a) a plurality of adjacent, substantially vertical gas-processing sections each of which includes:

(1) heat exchange means having a predetermined cross-sectional area, and

(2) a cover for said section with aperture means formed therein whose area is substantially smaller than said predetermined area, and

(b) a high temperature combustion chamber disposed above said sections and in gas-flow communication therewith through said aperture means.

2. The incineration apparatus according to claim 1 wherein there are at least three of said gas processing sections.

3. The incineration apparatus according to claim 1 wherein each processing section includes a plenum formed above said heat exchange means and below said covers through which upwardly-flowing gases pass from said heat-exchange means and through said aperture means to said combustion chamber.

4. The incineration apparatus according to claim 1 wherein said covers are generally dome-shaped and wherein said aperture means comprise generally centrally located openings therein.

5. The incineration apparatus according to claim 2 wherein said sections have respective cross-sections in the form of sectors of a circle, said sectors being arranged radially about the vertical axis of said apparatus.

6. The incineration apparatus according to claim 5 wherein said sections have common vertical dividing walls made of a refractory material.

7. The incineration apparatus according to claim 5 wherein each of said sections has respective vertical side walls separated by respective spaces from the vertical side walls of the sections adjacent thereto, said vertical side walls being made of a heat-conducting material.

8. The incineration apparatus according to claim 1 wherein inlet and outlet concentric circular ducts are provided and surround said gas-processing sections.

9. The incineration system according to claim 8 wherein a plurality of generally horizontal feeder ducts are respectively coupled to said circular ducts at each processing section and are also respectively coupled to the latter below said heat exchange means, said feeder ducts being provided with respective valves where they are coupled to said circular ducts.

10. The incineration system according to claim 2 wherein generally L-shaped distribution ducts are arranged parallel to one another and to two adjacent sides of said processing sections and further wherein each section is provided with duct means coupling a point in it below its heat exchange means to both of said L-shaped ducts via respective valve means.

11. Thermal recovery incineration apparatus constructed and arranged substantially as herein particularly described with reference to any one of the embodiments shown in the accompanying drawings.